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10/698,820	10/31/2003	Matthew Englehart	MWS-062RCE2	1288
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/698,820

**Applicant(s)**

ENGLEHART ET AL.

**Examiner**

Qing Chen

**Art Unit**

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. This Office action is in response to the amendment filed on November 10, 2008, entered by the RCE filed on the same date.
2. **Claims 1-26** are pending.
3. **Claims 1 and 16** have been amended.
4. The objections to Claims 1-26 are withdrawn in view of Applicant's amendments to the claims.
5. It is noted that Claim 19 contains no proposed amendments. However, the claim bears the "currently amended" status identifier.

***Continued Examination Under 37 CFR 1.114***

6. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 10, 2008 has been entered.

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-8, 11-23, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **“Real-Time Workshop® User’s Guide,” January 1999 (hereinafter “RTW\_UG”)** in view of **US 2003/0056195 (hereinafter “Hunt”)**.

As per **Claim 1**, RTW\_UG discloses:

- providing an automatic code generator to create source code that implements functionality of said at least one graphical model and that corresponds to data referenced by said at least one graphical model (*see Figure 3-1; Chapter 3-3, “The Real-Time Workshop automates the task of building a stand-alone program from your Simulink model.”*); and
- specifying a first manner in which said automatic code generator creates said source code (*see Chapter 3-6, “All pages of the Simulation Parameters dialog box affect Real-Time Workshop code generation.”*).

However, RTW\_UG does not disclose:

- providing a user interface with a plurality of selectable parameters; and
- creating a custom storage class in said graphical modeling and execution environment utilizing parameters selected by a user from said plurality of selectable parameters, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model in said graphical modeling and execution environment, said second manner differing from said first manner.

Hunt discloses:

- providing a user interface with a plurality of selectable parameters (*see Figure 2; Paragraph [0049], "The code generator tool of the preferred embodiment of the present invention is embodied as an application program that presents the user with a Graphical User Interface (GUI) that can be used to easily input meta data about an object model."*); and

- creating a custom storage class in said graphical modeling and execution environment utilizing parameters selected by a user from said plurality of selectable parameters, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model in said graphical modeling and execution environment, said second manner differing from said first manner (*see Paragraph [0050], "Turning now to FIG. 1, by way of an overview, the user of the code generator 100 ... of the present invention enters meta-data 102 into the code generator 100's GUI."; Paragraph [0083], "Consider now the entry of the meta data used in connection with the present invention. Such information representing the meta data is input via the GUI such as illustrated in FIGS. 2-6."; Paragraph [0088], "When the user is ready to build the class, the "Generate" button 218 can be selected, for example by clicking with a mouse."*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include providing a user interface with a plurality of selectable parameters; and creating a custom storage class in said graphical modeling and execution environment utilizing parameters selected by a user from said plurality of selectable parameters, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model in said graphical modeling and execution

environment, said second manner differing from said first manner. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and RTW\_UG further discloses:

- providing a view of salient aspects of said source code generated by said automatic code generator utilizing the user-selected parameters (*see Chapter 11-6, “MdlStart Function Custom Code dialog box”*).

As per **Claim 3**, the rejection of **Claim 2** is incorporated; however, RTW\_UG does not disclose:

- changing said user-selected parameters for said custom storage class in said user interface; and
- adjusting said source code generated by said automatic code generator to reflect said change in said user-selected parameters.

Hunt discloses:

- changing said user-selected parameters for said custom storage class in said user interface (*see Paragraph [0050], “When a change to the object model needs to be made, the user can simply update the meta data through the GUI and regenerate all the files associated with the object model.”*); and

- adjusting said source code generated by said automatic code generator to reflect said change in said user-selected parameters (*see Paragraph [0050], "When a change to the object model needs to be made, the user can simply update the meta data through the GUI and regenerate all the files associated with the object model."*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include changing said user-selected parameters for said custom storage class in said user interface; and adjusting said source code generated by said automatic code generator to reflect said change in said user-selected parameters. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 4**, the rejection of **Claim 3** is incorporated; and RTW\_UG further discloses:

- displaying salient aspects of said adjusted source code in said view of salient aspects of said source code (*see Chapter 11-6, "MdlStart Function Custom Code dialog box"*).

As per **Claim 5**, the rejection of **Claim 2** is incorporated; and RTW\_UG further discloses:

- wherein said view of salient aspects of said source code automatically generated includes at least one token, said at least one token being symbolically representative of a non-displayed segment of said source code (*see Chapter 3-23, "Template makefiles are essentially*

*makefiles in which certain tokens are expanded to create a makefile for your model (model.mk). model.mk is created from the template makefile specified in the Real-Time Workshop page of the Simulation Parameters dialog box by copying each line from the template makefile and expanding the tokens of Table 3-4.”).*

As per **Claim 6**, the rejection of **Claim 1** is incorporated; however, RTW\_UG does not disclose:

- wherein said custom storage class declares macros for instances of constant data.

Hunt discloses:

- wherein said custom storage class declares macros for instances of constant data (*see Paragraph [0050], “This meta-data represents a hierarchy of interfaces that include attributes and operations and is stored in a SQL compliant database in the preferred embodiment. From this data, the current embodiment of the code generator generates the following seven C++ files plus four database SQL files where applicable: ...”).*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include wherein said custom storage class declares macros for instances of constant data. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).



As per **Claim 7**, the rejection of **Claim 1** is incorporated; however, RTW\_UG does not disclose:

- wherein said custom storage class declares variables for instances of constant data.

Hunt discloses:

- wherein said custom storage class declares variables for instances of constant data

*(see Paragraph [0050], "This meta-data represents a hierarchy of interfaces that include attributes and operations and is stored in a SQL compliant database in the preferred embodiment. From this data, the current embodiment of the code generator generates the following seven C++ files plus four database SQL files where applicable: ...").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include wherein said custom storage class declares variables for instances of constant data. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 8**, the rejection of **Claim 1** is incorporated; however, RTW\_UG does not disclose:

- wherein said user-selected parameters control at least one of a manner in which automatically generated source code is defined, declared, accessed and addressed.

Hunt discloses:

- wherein said user-selected parameters control at least one of a manner in which automatically generated source code is defined, declared, accessed and addressed (*see Figure 2; Paragraph [0049], "The code generator tool of the preferred embodiment of the present invention is embodied as an application program that presents the user with a Graphical User Interface (GUI) that can be used to easily input meta data about an object model."*; Paragraph [0050], "Turning now to FIG. 1, by way of an overview, the user of the code generator 100 ... of the present invention enters meta-data 102 into the code generator 100's GUI."; Paragraph [0083], "Consider now the entry of the meta data used in connection with the present invention. Such information representing the meta data is input via the GUI such as illustrated in FIGS. 2-6.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include wherein said user-selected parameters control at least one of a manner in which automatically generated source code is defined, declared, accessed and addressed. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 11**, the rejection of **Claim 1** is incorporated; however, RTW\_UG does not disclose:

- creating a separate header file with said automatic code generator in response to said selection of one of said plurality of user-selected parameters.

Hunt discloses:

- creating a separate header file with said automatic code generator in response to said selection of one of said plurality of user-selected parameters (*see Paragraph [0051], “1. A hierarchy of C++ Interface definition files shown as interface.h header files 106 ...”*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include creating a separate header file with said automatic code generator in response to said selection of one of said plurality of user-selected parameters. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 12**, RTW\_UG discloses:

- a processor for:
  - executing an automatic code generator to create source code that implements functionality of said at least one graphical model and that corresponds to data referenced by said at least one graphical model (*see Figure 3-1; Chapter 3-3, “The Real-Time Workshop automates the task of building a stand-alone program from your Simulink model.”*); and
  - specifying a first manner in which said automatic code generator creates said source code (*see Chapter 3-6, “All pages of the Simulation Parameters dialog box affect Real-Time Workshop code generation.”*); and
- a display device for:

- displaying a view of salient aspects of said source code generated by said automatic code generator utilizing said user-selected parameters (*see Section 11-6, "MdlStart Function Custom Code dialog box"*).

However, RTW\_UG does not disclose:

- creating a custom storage class in said modeling and execution environment, said custom storage class created utilizing parameters selected by a user from a plurality of selectable parameters; and

- displaying a user interface with said plurality of selectable parameters for said custom storage class, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model, said second manner differing from said first manner.

Hunt discloses:

- creating a custom storage class in said modeling and execution environment, said custom storage class created utilizing parameters selected by a user from a plurality of selectable parameters (*see Paragraph [0088], "When the user is ready to build the class, the "Generate" button 218 can be selected, for example by clicking with a mouse."*); and

- displaying a user interface with said plurality of selectable parameters for said custom storage class, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model, said second manner differing from said first manner (*see Figure 2; Paragraph [0049], "The code generator tool of the preferred embodiment of the present invention is embodied as an application program that presents the user with a Graphical User Interface (GUI) that can be*

*used to easily input meta data about an object model.”; Paragraph [0050], “Turning now to FIG. 1, by way of an overview, the user of the code generator 100 ... of the present invention enters meta-data 102 into the code generator 100’s GUI.”; Paragraph [0083], “Consider now the entry of the meta data used in connection with the present invention. Such information representing the meta data is input via the GUI such as illustrated in FIGS. 2-6.”).*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include creating a custom storage class in said modeling and execution environment, said custom storage class created utilizing parameters selected by a user from a plurality of selectable parameters; and displaying a user interface with said plurality of selectable parameters for said custom storage class, said custom storage class specifying a second manner in which said automatic code generator creates source code corresponding to said data referenced by said at least one graphical model, said second manner differing from said first manner. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (see Hunt – Paragraph [0004]).

As per **Claim 13**, the rejection of **Claim 12** is incorporated; however, RTW\_UG does not disclose:

- wherein said user-selected parameters for said custom storage class in said user interface are changed and said source code generated by said automatic code generator is adjusted to reflect said change in user-selected parameters.

Hunt discloses:

- wherein said user-selected parameters for said custom storage class in said user interface are changed and said source code generated by said automatic code generator is adjusted to reflect said change in user-selected parameters (*see Paragraph [0050], “When a change to the object model needs to be made, the user can simply update the meta data through the GUI and regenerate all the files associated with the object model.”*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Hunt into the teaching of RTW\_UG to include wherein said user-selected parameters for said custom storage class in said user interface are changed and said source code generated by said automatic code generator is adjusted to reflect said change in user-selected parameters. The modification would be obvious because one of ordinary skill in the art would be motivated to apply the same user edits to model data without introducing errors (*see Hunt – Paragraph [0004]*).

As per **Claim 14**, the rejection of **Claim 13** is incorporated; and RTW\_UG further discloses:

- wherein said adjusted source code is displayed in said view of salient aspects of said source code (*see Chapter 11-6, “MdlStart Function Custom Code dialog box”*).

As per **Claim 15**, the rejection of **Claim 12** is incorporated; and RTW\_UG further discloses:

- wherein said view of salient aspects of said source code includes at least one token, said at least one token being symbolically representative of a non-displayed segment of code (*see*

*Chapter 3-23, "Template makefiles are essentially makefiles in which certain tokens are expanded to create a makefile for your model (model.mk). model.mk is created from the template makefile specified in the Real-Time Workshop page of the Simulation Parameters dialog box by copying each line from the template makefile and expanding the tokens of Table 3-4.").*

**Claims 16-23 and 26** are computer-readable medium claims corresponding to the method claims above (Claims 1-8 and 11) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1-8 and 11.

9. **Claims 9, 10, 24, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **RTW\_UG** in view of **Hunt** as applied to Claims 1 and 16 above, and further in view of **US 2003/0225774 (hereinafter "Davidov")**.

As per **Claim 9**, the rejection of **Claim 1** is incorporated; however, RTW\_UG and Hunt do not disclose:

- wherein said user-selected parameters include a non-portable directive to a compiler.

Davidov discloses:

- wherein said user-selected parameters include a non-portable directive to a compiler (see Paragraph [0092], "Command line options or directives for the compiler ..."; Paragraph [0214], "The compiler compiles Java source code produced by the generator according to supplied directives.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Davidov into the teaching of RTW\_UG to include wherein said user-selected parameters include a non-portable directive to a compiler. The modification would be obvious because one of ordinary skill in the art would be motivated to conveniently and dynamically create software programs that can be executed on a computer system.

As per **Claim 10**, the rejection of **Claim 9** is incorporated; however, RTW\_UG and Hunt do not disclose:

- wherein said non-portable directive to a compiler assigns data to at least one memory location in said electronic device.

Davidov discloses:

- wherein said non-portable directive to a compiler assigns data to at least one memory location in said electronic device (*see Paragraph [0160], "The data is loaded when the application is started, and is saved when the application is destroyed. This type of persistence uses the device records management system (RMS), for example, non-volatile memory."*).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Davidov into the teaching of RTW\_UG to include wherein said non-portable directive to a compiler assigns data to at least one memory location in said electronic device. The modification would be obvious because one of ordinary skill in the art would be motivated to store data that can be utilized at a later time.



**Claim 24** is rejected for the same reason set forth in the rejection of Claim 9.

**Claim 25** is rejected for the same reason set forth in the rejection of Claim 10.

***Response to Arguments***

10. Applicant's arguments filed on November 10, 2008 have been fully considered, but they are not persuasive.

***In the Remarks, Applicant argues:***

a) In Hunt, a class is first created, and then a user is allowed to generate code for the class by specifying settings. That is, the class for which code is generated already exists before the user starts the code generation process outlined in paragraph [0088]. The settings specified by the user in the code generation process are not used to create the class, but merely directs the code generation.

In contrast, claim 1 requires creating a custom storage class by utilizing parameters selected by a user from a plurality of selectable parameters. Hunt merely discusses generating code for a class by using settings specified by a user in the code generation process. However, Hunt does not disclose or suggest creating a class by utilizing any such parameters selected by a user, as required by claim 1.

***Examiner's response:***

a) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, with respect to the Applicant's assertion that Hunt does not disclose or suggest creating a class by utilizing any parameters selected by a user, as previously pointed out in the Final Rejection (mailed on 06/09/2008) and further clarified hereinafter, the Examiner respectfully submits that Hunt clearly discloses "creating a custom storage class in said graphical modeling and execution environment utilizing parameters selected by a user from said plurality of selectable parameters" (*see Paragraph [0088], "When the user is ready to build the class, the "Generate" button 218 can be selected, for example by clicking with a mouse."*). Note that Figures 2-6 of Hunt clearly illustrate a GUI that allows a user to input metadata for a customized class. When the user is ready to build the customized class, the user clicks on the "Generate" button to generate code for the customized class.

Second, the claims recite only "creating a custom storage class" with no further clarification on the claim scope of the term "creating" as intended by the Applicant to cover. Thus, as the claims are interpreted as broadly as their terms reasonably allow (see MPEP § 2111.01(I)), the interpretation of a broad limitation of "creating a custom storage class" as generating code for a customized class and the like by one of ordinary skill in the art is considered to be reasonable by its plain meaning.

Therefore, for at least the reasons set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 1, 12, and 16 are proper and therefore, maintained.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The

Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM.

The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191